



# SPEC® CINT2006 Result

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## NEC Corporation

Express5800/110Rh-1  
(Intel Xeon processor X3210)

SPECint®\_rate2006 = 46.7

SPECint\_rate\_base2006 = 43.7

CPU2006 license: 9006

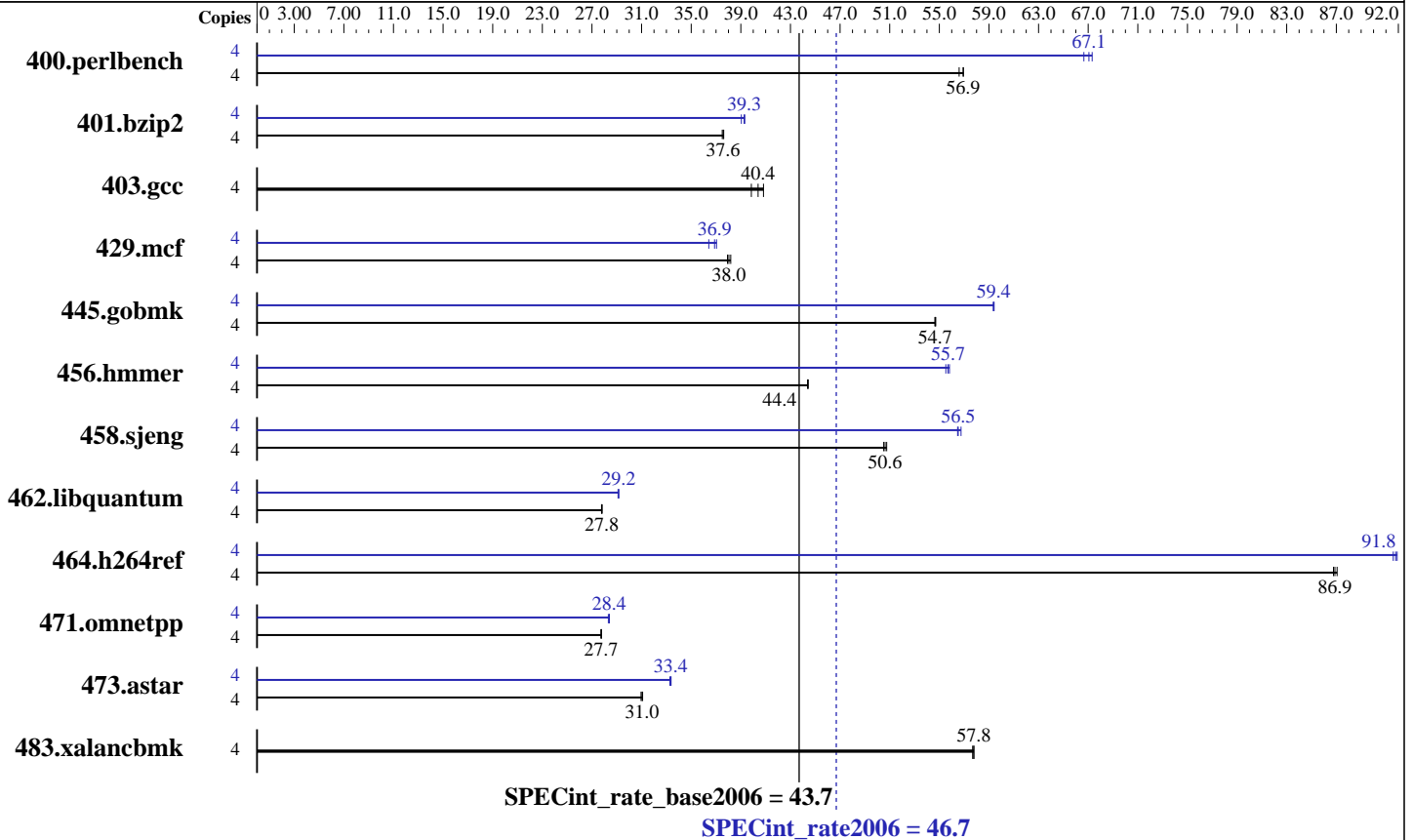
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Nov-2007

Hardware Availability: Jan-2007

Software Availability: Jun-2007



### Hardware

CPU Name: Intel Xeon X3210  
 CPU Characteristics: 2.13 GHz, 2x4 MB L2 shared, 1066 MHz bus  
 CPU MHz: 2133  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores  
 L3 Cache: None  
 Other Cache: None  
 Memory: 4 GB (4x1 GB PC2-5300E, 2 rank, CL5-5-5, ECC)  
 Disk Subsystem: 1x80 GB SATAII, 7200RPM  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64), Kernel 2.6.16.21-0.8-smp  
 Compiler: Intel C++ Compiler for IA32/EM64T application, Version 10.0 - Build 20070426 Package ID: I\_cc\_p\_10.0.023  
 Auto Parallel: No  
 File System: ext2  
 System State: Multiuser, Runlevel 3  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: MicroQuill SmartHeap library 8.1 binutils-2.17.tar.gz, Version 2.17



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## Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
400.perlbench	4	690	56.6	<b>687</b>	<b>56.9</b>	686	56.9	4	<b>583</b>	<b>67.1</b>	581	67.3	586	66.7		
401.bzip2	4	1026	37.6	<b>1027</b>	<b>37.6</b>	1029	37.5	4	982	39.3	<b>983</b>	<b>39.3</b>	989	39.0		
403.gcc	4	<b>797</b>	<b>40.4</b>	789	40.8	808	39.8	4	<b>797</b>	<b>40.4</b>	789	40.8	808	39.8		
429.mcf	4	<b>959</b>	<b>38.0</b>	955	38.2	962	37.9	4	985	37.0	1002	36.4	<b>989</b>	<b>36.9</b>		
445.gobmk	4	767	54.7	<b>768</b>	<b>54.7</b>	768	54.6	4	707	59.3	<b>707</b>	<b>59.4</b>	706	59.4		
456.hmmmer	4	840	44.4	<b>840</b>	<b>44.4</b>	841	44.4	4	672	55.5	669	55.8	<b>670</b>	<b>55.7</b>		
458.sjeng	4	<b>956</b>	<b>50.6</b>	958	50.5	954	50.8	4	<b>856</b>	<b>56.5</b>	857	56.5	853	56.7		
462.libquantum	4	2979	27.8	2984	27.8	<b>2983</b>	<b>27.8</b>	4	2843	29.2	<b>2843</b>	<b>29.2</b>	2848	29.1		
464.h264ref	4	1020	86.8	<b>1019</b>	<b>86.9</b>	1017	87.1	4	963	91.9	967	91.6	<b>964</b>	<b>91.8</b>		
471.omnetpp	4	902	27.7	900	27.8	<b>901</b>	<b>27.7</b>	4	883	28.3	<b>881</b>	<b>28.4</b>	880	28.4		
473.astar	4	<b>905</b>	<b>31.0</b>	907	31.0	903	31.1	4	<b>842</b>	<b>33.4</b>	841	33.4	844	33.3		
483.xalanbmk	4	<b>478</b>	<b>57.8</b>	478	57.7	478	57.8	4	<b>478</b>	<b>57.8</b>	478	57.7	478	57.8		

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run  
'/usr/bin/taskset' used to bind processes to CPUs

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmmer, for peak, are compiled in 64-bit mode

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalanbmk: -DSPEC\_CPU\_LINUX



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## Base Optimization Flags

C benchmarks:

-fast

C++ benchmarks:

-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs  
-L/opt/SmartHeap\_8.1/lib -lsmartheap

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc

401.bzip2: /opt/intel/cce/10.0.023/bin/icc  
-L/opt/intel/cce/10.0.023/lib  
-I/opt/intel/cce/10.0.023/include

456.hmmer: /opt/intel/cce/10.0.023/bin/icc  
-L/opt/intel/cce/10.0.023/lib  
-I/opt/intel/cce/10.0.023/include

C++ benchmarks:

icpc

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

Continued on next page



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## Peak Optimization Flags (Continued)

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias  
-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast

403.gcc: basepeak = yes

429.mcf: -fast -prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xT -O2 -ipo  
-no-prec\_div -ansi-alias

456.hmmer: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-ansi-alias

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -Ob0  
-prefetch -opt-streaming-stores always

464.h264ref: Same as 456.hmmer

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo  
-no-prec\_div -ansi-alias -Wl,-z,muldefs  
-L/opt/SmartHeap\_8.1/lib -lsmartheap

473.astar: Same as 471.omnetpp

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/NEC-ic10-INT-ia32-intel64-linux-flags.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/NEC-ic10-INT-ia32-intel64-linux-flags.xml>



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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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